It will hardly be profitable to mention other special features of the text, or to consider the treatment of special topics.   Suffice it to say that the book is worthy of the author and the series.   Mention should be made, however, of the excellent bibliography at the end and of the unusually well-arranged indexes by names and by subjects.

Attention should be called frankly and distinctly to one other matter, and that is the price of the book.   It may be stated at the outset that American scholars are generally desirous of seeing not only peace established among nations, but amicable relations resumed among scholars the world over.   In particular, they are, in general, doing all in their power to foster good relations with their German colleagues and to arrange for an exchange of scientific literature of all kinds.   But when it comes to the prices of German books they generally feel that a mistake is being made by Berlin and Leipzig publishers and by the German government.   Here, for example, is a book that is published in Leipzig at 45 marks, list, subject to dealers' discount.   At the current rate of exchange, this amounts to 25 cents, and yet the publisher quotes it to the American purchaser at $2.25.   Americans are perfectly willing to pay the Leipzig price, and to add thereto any reasonable export duty that may be laid, together with the regular charge for postage; but it would be difficult to find any scholar, be he librarian or teacher, who feels that he should pay any such exorbitant price as this.   It gives the impression that the German publishers and government expect Americans to help Germany pay for a war which America did its best to prevent and for which it has already paid out vast sums.   The opinion may be wrong, but it is the opinion that is held, and it is very safe to say that the sale of German books in this country will never assume anything like its former proportions so long as this policy or any approach to this policy continues.

DAVID EUGENE SMITH.

The Sumario Compendioso of Brother Juan Diez. The Earliest Mathematical Work of the New World. By DAVID EUGENE SMITH.   Boston and London, Ginn and Company, [April] 1921.   sm. 4to.   7 + 65 pp.   Price $4.00.

Let us first consider who the author of the *Sumario Compendioso* was.

In his *Rara Arithmetica*, Boston, 1908, page 286, D. E. Smith drew attention to this *Sumario* by "Juan Diaz Freyle" as "the first arithmetic printed in America."   The author's name is later indexed under "Freyle" and not under either Diaz or Diez.   In an address published in this MONTHLY, *1921*, 10–15, Professor Smith gave a general description of the *Sumario* and its setting, and quoted typical problems "listed under algebra" and "not listed under algebra." The title-page of the original work was here reproduced in facsimile, on page 11, where the author's name is "Juan Diez freyle."   In the course of his sketch Professor Smith refers to the author as simply Juan Diez.   In the work under review, his translation of the author's name is "Brother Juan Diez."   This may be assumed as an indication of the present result of Professor Smith's investigations in this connection.

In each of the two works to which one would naturally turn for information regarding the *Sumario*, the name of the author is given as "Juan Diez Freile," and in the index of one of them the name occurs as "Diez Freile, Juan." The works in question are: (a) *Bibliografia Mexicana del Siglo XVI* by J. G. Icazbalceta, Primera parte, Mexico, 1886; (b) *La Imprenta en México (1539–1821)* by J. T. Medina, Tomo 1, Santiago de Chile, 1909. It were desirable, then, that Professor Smith had given the reasons for his change of opinion as to the interpretation of "Freyle." [1]

Regarding the existing copies of the *Sumario*, Professor Smith states that "there remain perhaps only four copies" and he quotes Icazbalceta (*l.c.*) who records that one copy was in the "Convento de la Merced," and that a second was sold in the Ramírez sale (1880) for £24; he adds that a third copy is in the British Museum, and that an imperfect fourth copy, from which his own photographic copy was made, is in the "Biblioteca Nacional at Madrid"; this copy lacks the last three folios.[2] Medina lists (*l.c.*) three known copies: one in the British Museum, one in "Biblioteca del Ministerio de Fomento en Madrid," and one in "Biblioteca de don Jacobo Parga en Madrid." One might infer, then, that there were six existing copies of the *Sumario*. The second copy listed by Medina seems, however, to be nothing but the copy in the "Biblioteca Nacional"; for, witness the library stamp on the title page reproduced in this MONTHLY (*l.c.*) from Professor Smith's photographic copy. Medina's third copy *may* be the one sold at the Ramírez sale. We conclude, then, that while there are at least four copies of the *Sumario*, there may be not less than five.[3]

The *Sumario* consists of 103 folios, including 2 pages for the dedication, 24 pages of mathematical text (18 pages relating directly to arithmetic, and 6 to algebra), an elaborate set of tables (about 180 pages), and the colophon. The work under review contains a facsimile of the mathematical text, and colophon, accompanied by a translation and valuable notes. Facsimiles of the title page and of one page of the tables are also given. Then there are 11 pages of introductory matter: "Mexico of the period," pages 3–4; "Printing established in Mexico," 5–6; "General description of the book," 7–8; and "Nature of the tables," 9–11. The outstanding facts in connection with this material have been already set forth in this MONTHLY (*l.c.*).

The "earliest mathematical work of the New World" must ever be one of great interest to the mathematician, who will be profoundly grateful to Professor Smith for so much of the work as he has made generally accessible and intelligible. The historian will naturally regret that such a rare book was not reproduced in its entirety, with commentary which Professor Smith is so finely equipped to provide.

The work under review was published only in an edition de luxe on Old

[1] In his review of the *Sumario*, Professor L. C. Karpinski questioned the propriety of Professor Smith's interpretation. See *School and Society*, August 13, 1921.

[2] "The University of Michigan library possesses the complete work in rotographs of the British Museum copy." L. C. Karpinski (*l.c.*).

[3] Thus Professor Karpinski made a slip in writing (*l.c.*): "Only two copies of the work appear to be known, the one incomplete in the Escurial and the other in the British Museum."

Stratford paper, and limited to 394 copies of which 210 were taken in advance of publication. It is a beautiful example of the bookmaker's art. Ginn and Company deserve heartiest congratulations.

<div align="right">R. C. ARCHIBALD.</div>

Primitive Groups. By W. A. MANNING. Part I. (*Stanford University Publications, University series,* Mathematics and Astronomy, volume 1, no. 1.) Stanford University, California, 1921. Royal 8vo. 108 pages. Paper. Price $1.25.

Preface: "Some knowledge of Algebraic Numbers and of the ordinary Theory of Numbers is assumed to have been acquired by the reader by way of preparation for a serious study of the subject of which this volume treats.

"An apology may be in order for the arrangement of the subject matter. It was arranged as it is to meet the needs of actual instruction. The use of 'group characteristics,' as developed by Frobenius, should be a familiar tool in the hands of the student as early as possible. Therefore linear substitutions are taken up in the third chapter. From the point of view of strict logic this study of linear substitutions and of linear groups should be quite fully developed before those very special substitutions which we call permutations are considered. But the idea of groups of noncommutative operations can, in the author's opinion, be best gained from a few lessons on the concrete and familiar permutations of a finite number of letters. Therefore the first two chapters are intended to familiarize the learner with the simpler processes used in Group Theory, to exhibit the fundamental theorems which admit of briefly worded proof, and to prepare the way for the more difficult developments of linear groups. Moreover, since any 'abstract' group of finite order is isomorphic to some group of permutations, it would seem that sufficient generality can be attained if the phraseology of the abstract theory is ignored, as is done in this book.

"In talking of prime numbers it is admitted that it is a matter of indifference whether unity is included among the primes or not. May one be permitted the same license, if for the sake of convenience in stating certain theorems, the identical substitution alone is denied the dignity of being called a group (§ 4)? The new terms 'similar groups' (§ 16), 'open product' (§ 21) and 'uniprimitive group' (§ 37) seem useful and necessary.

"In justification of the publication of these pages in our University series, it may be stated that some of the material to be found in the volume is new. In particular, theorems II of § 37, I of § 38, and I of § 45 have not been published elsewhere.

"Among the sources from which the author has drawn inspiration and material the following treatises should be mentioned: Jordan, *Traité des Substitutions;* Weber, *Lehrbuch der Algebra;* Burnside, *Theory of Groups;* Dickson, *Linear Groups;* Miller, Blichfeldt and Dickson, *Finite Groups;* Blichfeldt, *Finite Collineation Groups;* Hilton, *Linear Substitutions.*

"But the memoirs of Jordan and of Frobenius have contributed more by way of suggestion and encouragement than any books."

Contents—Chapter I: The elementary theory of groups of permutations, 7–27; II: Transitive groups, 28–44; III: Group characteristics, 45–69; IV: Applications of group characteristics, 70–80; V: Transitive groups, 81–91; VI: Primitive groups with transitive subgroups of lower degree, 92–108.

Computing Jetons. By D. E. SMITH. (*Numismatic Notes and Monographs,* no. 9.) New York, The American Numismatic Society, 1921. 16mo. 2 + 70 pp. + 5 plates. Paper cover, price $1.50.

This monograph, embellished with 20 pages of illustrations in addition to the plates, is based upon an address delivered by the author before the American Numismatic Society, in New York City, on February 7, 1921. Introductory paragraphs: "In accepting the invitation . . . to speak upon the subject of Computing Jetons, I have naturally considered the possibility of offering something that might appeal to its members as not already familiar. Few works upon any subject relating to numismatics are so exhaustive in their special fields as the monumental and scholarly treatise of Professor Francis Pierrepont Barnard (*Casting-Counter and Counting-Board,* Oxford, 1916), and hence it may seem quite superfluous, and indeed presumptuous, to attempt to supplement such a storehouse of information.